REMARKS

This paper is responsive to any paper(s) indicated above, and is responsive in any other manner indicated below.

PENDING CLAIMS

Claims 1-8 and 10-18 were pending, under consideration and subjected to examination in the Office Action. Appropriate claims have been amended, canceled and/or added (without prejudice or disclaimer) in order to adjust a clarity and/or focus of Applicant's claimed invention. That is, such changes are unrelated to any prior art or scope adjustment and are simply refocused claims in which Applicant is present interested. At entry of this paper, Claims 1-8 and 15-21 will be pending for further consideration and examination in the application.

REJECTION UNDER 35 USC '103

The 35 USC '103 rejection of claims 1-8 and 15-18 as being unpatentable over Mizuno et al. (U.S. Patent 5,876,325) is respectfully traversed. However, such rejections have been rendered obsolete by the present clarifying amendments to Applicant's claims, and accordingly, traversal arguments are not appropriate at this time. However, Applicant respectfully submits the following to preclude renewal of any such rejections against Applicant's clarified claims. That is, insofar as any such

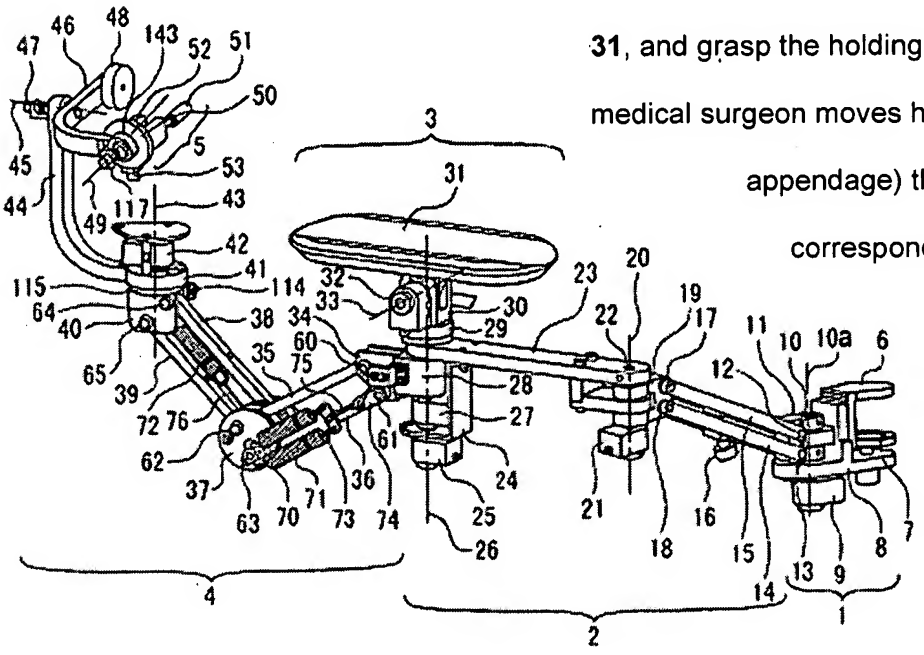
rejection applies to Applicant's presently-clarified claims, Applicant respectfully submits the following.

All descriptions of Applicant's disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated hereat by reference. Further, regarding any descriptions and rebuttal arguments concerning Applicant's invention and/or the applied prior art as included herein, yet found to be corrective over prior descriptions and rebuttal arguments, such corrective descriptions and rebuttal arguments should be considered to supersede prior descriptions and rebuttal arguments. Still further, all Office Action statements regarding the prior art rejections are respectfully traversed. As additional arguments, Applicant respectfully submits the following.

Applicant's disclosed and claimed invention is directed toward an operation input device which is capable of remotely instructing a surgical operation, for example, by easily **separating an attitude instruction from a position instruction**.

More particularly, attention is directed to Applicant's **FIG. 2** (reproduced herewith for convenience) which illustrates an example operation

FIG.2



input device. A medical surgeon may then support his/her forearm on the long support **31**, and grasp the holding unit **5**. As the medical surgeon moves his/her arm (i.e., appendage) thereafter, a corresponding remote surgical robotic arm will mimic the movements of the surgeon. **One important feature** of Applicant's operation input device, is that a "first (position) operation input unit" 3 and a "second (attitude) operation input unit" 3 contact and move with movement of a first and second portion of a same appendage (i.e., arm) of the surgeon operator. The forearm/wrist portion is used to derive **position** information, whereas the fingers portion is used to derive **attitude** information. That is, different parts of Applicant's operation input device are used to produce different information.

In terms of distinguishing features/limitations, clarified independent claim 1, for example, recites: "**An operation input device** for allowing an operator to input a movement instruction to an object to be controlled, comprising: **a first movement detection unit for detecting the position of a first operation input unit which contacts and moves with movement of a first portion of an appendage of the operator**, wherein the first movement detection unit has at least three degrees of freedom; and **a second movement detection unit for detecting the position and attitude of a second operation input unit which contacts and moves with movement of a second portion of same appendage of the operator** and which is connected via linkage to the first operation input unit, wherein the second movement detection unit has six degrees of freedom."

Turning to rebuttal of the applied reference, **Mizuno et al.** is deficient (at minimum) in that each of Mizuno et al.'s input units **163, 164** (using Mizuno et al.'s **FIG. 25A**, for example) appear to be grasped only once by the surgeon, and thus are only contacted once (at best) by the surgeon's appendage (i.e., each arm).

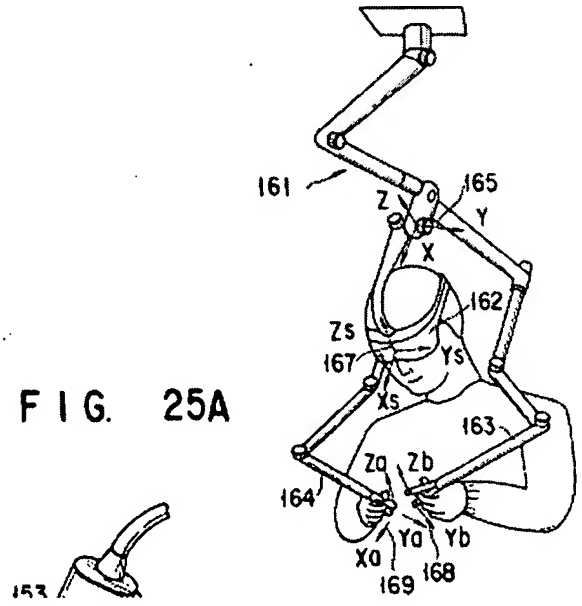
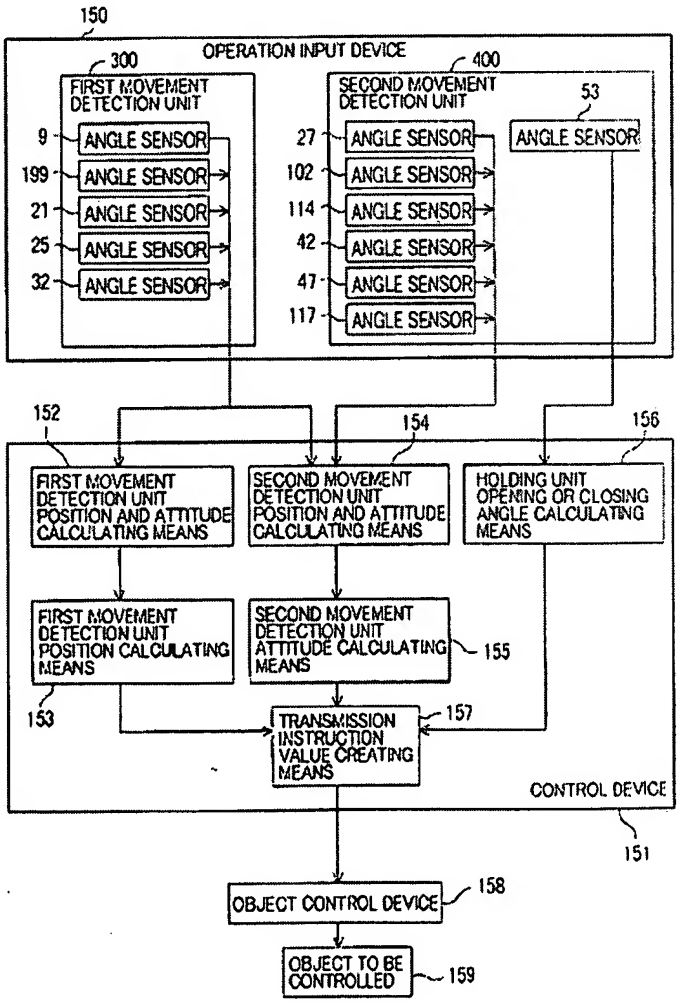


FIG. 25A

Regarding added independent **claim 19**, such claim includes (using Applicant's **FIG. 10** as an illustrative example) "a first movement detection unit **300** configured to detect, via **a first plurality of sensor units**, the position of a first operation input unit which contacts and moves with movement of a first portion of an appendage of the operator, wherein the first movement detection unit has at least three degrees of freedom; a second movement detection unit **400** configured to detect, **via a second plurality of sensor units**, the position and attitude of a second operation input unit which contacts and moves with movement of a second portion of same appendage of the operator and which is connected via linkage to the first operation input unit, wherein the second movement detection unit has six degrees of freedom; **a first calculating unit 152, 153 configured to receive outputs of only the first plurality of sensor units, and to extract only position information of a position of the first operation input unit responsive thereto**; and, **a second calculating unit 154, 155 configured to receive outputs of both the first plurality of sensor units and the second plurality of sensor units, and to extract only attitude information of an attitude of the second operation input unit, responsive thereto**.

FIG.10



Mizuno et al. is further deficient, in that Mizuno et al. nowhere discloses or suggests any first calculating unit extracting only position information of a first operation input unit, or second calculating unit extracting only attitude information of a second operation input unit.

In addition to the foregoing, the following additional remarks from Applicant's foreign representative are also submitted in support of traversal of the rejection and patentability of Applicant's claims.

There are surgical situations where an operating surgeon may **change the attitude** of an operating tool **while the position of the wrist of the surgeon is fixed**, or an opposite where the **position of the wrist of the surgeon may be changed** while **the attitude of an operating tool is fixed**. Therefore, Applicant's invention as claimed in this application has the object to enable, in an operation input instruction given in a case where one of manipulators is operated, the instruction to be given by **separating an attitude instruction from a position instruction** with respect to the manipulator (see [0075] and [0076] for the structure in which an instruction may be given by separating an attitude instruction from a position instruction).

Mizuno et al. discloses, as illustrated in FIG 1, a method of using master manipulators 16 or 17 to operate slave manipulators 3 or 4, respectively. Specifically, the detecting means **detects a difference between the position of the master manipulator and the position of the slave manipulator,** and a **difference between the attitude of the master manipulator and the attitude of the slave manipulator**. Then, the controller controls the slave manipulator **based on the**

differences detected by the detecting means, to thereby change the position and attitude of the slave manipulator to those of the master manipulator.

In FIGs. 25 of Mizuno et al., however, in a case where the instruments 156 and 157 provided at the distal ends of the operation arms 163 and 164 are to be operated, respectively, in order to precisely operate the instruments 156 and 157, the surgeon needs to operate the instruments 156 and 157 **while the positions of the distal ends of the operation arms 163 and 164 are made constant**, respectively, but Mizuno et al. does not disclose or suggest such practical method for doing so.

According to Mizuno et al., the instruments 156 and 157 are controlled respectively based on the relationship between the tool coordinate system 165 corresponding to the coordinate system of each of the operation arms 163 and 164 and the control coordinate systems 168 and 169 corresponding to the coordinate systems of the respective distal ends of the instruments 156 and 157. Hence, there arises such a problem in Mizuno et al. that the surgeon always needs to operate the instruments 156 and 157 **while the positions of the distal ends of the operation arms 163 and 164 are made constant**, respectively.

Meanwhile, according to Applicant's invention as claimed in this application, as described in [0070], the control point corresponding to the wrist of the operator and the control point corresponding to the finger of the operator are **separated from each other** in the operation input device. Hence, detection of an operation with respect to the **position** and detection of operation with respect to the **attitude** can be **separated mechanically** (see also [0075] to [0077] as well as [0070]).

As described above, according to Applicant's invention as claimed in this application, safety of surgical operation is improved by improving operability of the operation input device for one of the manipulators of the operation system constituted by a plurality of manipulators. Thus, it is respectfully submitted that Applicant's invention as claimed in this application could not have easily been conceived based on Mizuno et al.

As a result of all of the foregoing, it is respectfully submitted that the applied art (taken alone and in the Office Action combinations) would not support a '103 obviousness-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such '103 rejection, and express written allowance of all of the '103 rejected claims, are respectfully requested.

EXAMINER INVITED TO TELEPHONE

The Examiner is herein invited to telephone the undersigned attorneys at the local Washington, D.C. area telephone number of 703/312-6600 for discussing any Examiner's Amendments or other suggested actions for accelerating prosecution and moving the present application to allowance.

RESERVATION OF RIGHTS

It is respectfully submitted that any and all claim amendments and/or cancellations submitted within this paper and throughout prosecution of the present application are without prejudice or disclaimer. That is, any above statements, or any present amendment or cancellation of claims (all made without prejudice or

disclaimer), should not be taken as an indication or admission that any objection/rejection was valid, or as a disclaimer of any scope or subject matter. Applicant respectfully reserves all rights to file subsequent related application(s) (including reissue applications) directed to any/all previously claimed limitations/features which have been subsequently amended or cancelled, or to any/all limitations/features not yet claimed, i.e., Applicant continues (indefinitely) to maintain no intention or desire to dedicate or surrender any limitations/features of subject matter of the present application to the public.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims listed above as presently being under consideration in the application are now in condition for allowance.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR '1.136. Authorization is herein given to charge any shortage in the fees, including extension of time fees and excess claim fees, to Deposit Account No. 01-2135 (Case No. 1213.43376X00) and please credit any excess fees to such deposit account.

Based upon all of the foregoing, allowance of all presently-pending claims is respectfully requested.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

/Paul J. Skwierawski/
Paul J. Skwierawski
Registration No. 32,173

PJS/slk
(703) 312-6600